DOCUMENT RESUME

ED 333 044 TM 016 586

AUTHOR Igoe, Ann R.; Sullivan, Howard
TITLE Gender and Grade-Level Differences in Student Attributes Related to School Learning and Motivation.
PUB DATE Apr 91
NOTE 22p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, April 3-7, 1991).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Age Differences; Attribution Theory; Comparative Testing; Grade 7; Grade 9; Grade 11; *Learning; Likert Scales; Locus of Control; Secondary Education; *Secondary School Students; Self Efficacy; *Sex Differences; Student Attitudes; *Student Motivation; Surveys
IDENTIFIERS Self Report Measures

ABSTRACT

Descriptive data were collected from male and female students in grades 7, 9, and 11 on five learner attributes commonly reported as influencing student learning and/or motivation: desire for approval of others, attribution of success or failure, desire for challenge in academic settings, perceived self-competence in school settings, and locus of control for learning activities. A 55-item 4-point Likert-type scale was developed--the Student School and Work Survey (SSWS). The SSWS was administered to 93 males and 106 females in grade 7, 96 males and 128 females in grade 9, and 105 males and 104 females in grade 11 at a high school in a large southwestern suburban school district. Pearson product moment correlation coefficients were computed for the 15 questions (3 per attribute) contained in the learner attribute section of the SSWS. These inter-item correlations revealed that, with one exception, correlations among pairs of items within a particular learner attribute were consistently significant beyond the 0.001 level and were consistently higher than were correlations with items assessing the other attributes. Females showed a higher desire than males for approval and challenge in school-related tasks. Data for males and females concerning attribution did not differ significantly, but reflected higher internal than external attribution for success in school. Relatively high levels of self-competence on school tasks and locus of control were found for both sexes. Compared to younger students, older students take less responsibility for their learning, desire less personal challenge, care less about the approval of others, and feel less school-related competence. Three data tables, two graphs, and a 20-item list of references are included. (RLC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Ann R. Igoe
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED330044

Gender and Grade-level Differences in Student Attributes Related to School Learning and Motivation

Ann R. Igoe

Howard Sullivan

Arizona State University

Paper presented at the Annual Convention of

the American Educational Research Association

Chicago, IL

April 1991

TM016586

BEST COPY AVAILABLE

Gender and Grade-level Differences in Student Attributes Related to School Learning and Motivation

Objective

The purpose of this study was to collect descriptive data from female and male students in grades 7, 9, and 11 on several learner attributes commonly reported to influence student learning and/or motivation. Five attributes which have received considerable research attention in recent years were selected for study: desire for approval of others, attribution of success or failure, desire for challenge in academic settings, perceived self-competence in school settings, and locus of control for learning activities.

Perspective or Theoretical Framework

Each of the attributes investigated in this study has been included in numerous recent studies of learning and motivation either as a research variable or as a construct employed to explain particular findings (Bogie & Buckhalt, 1987; Diesterhaft & Gerken, 1983; Harter, 1981; Rosen & Aneshensel, 1978). Several of these attributes are thought to vary by gender and may also vary by developmental level. Evidence of the variation has been obtained by direct measurement in some cases (e.g., male-female variation in desire for approval) but primarily by inference from learner behavior in other cases (e.g., male-female variation in challenge). This study was conducted to measure

levels of each of these attributes, as they pertain to school-related tasks, in adolescent females and males as reported by the subjects themselves.

It has been theorized that challenge is a greater factor in boys' motivation for school tasks, and that social approval is a greater factor in girls' motivation for school tasks (Harter, 1978; Van Hecke, Tracy, Cotler & Ribordy, 1984). While this adult reasoning may seem logical, no self-report evidence has been presented from boys and girls themselves to validate it.

Academic achievement has been shown to be a major source of approval and social acceptance for females (Diesterhaft & Gerken, 1983; Gould & Slone, 1982; Prawat, 1976). Girls may be as desirous of challenge as boys, but they may sacrifice challenge for approval when the two conflict (Story & Sullivan, 1986; Van Hecke, et al., 1984; Whitehead, Anderson & Mitchell, 1987).

Self-perception of competence is commonly accepted as a predictor of academic achievement. Females often show lower expectations of task success and lower ability estimates than do males (Jagacinski & Nicholls, 1987; McCombs, 1984; Prawat, 1976; Sleeper & Nigro, 1987). Females also attribute failure to lack of ability more often than do males (Miller, 1986; Parsons, Meece, Adler & Kaczala, 1982). Locus of control for responsibility of learning or task outcome is seen as an important correlate to self concept and to attributions for success (McCombs, 1984; Prawat, 1976; Uguroglu & Walberg, 1986).

Method

The data were collected through subjects' self-reports on a Student School and Work Survey (SWSS), designed by the authors for the purposes of this research. In addition to the section on learner attributes, the survey also contained separate sections on preferences for job characteristics and selected occupations.

The SWSS was administered to a total of 632 students, 338 females and 294 males, from grades seven, nine, and eleven at a junior and senior high school in a large southwestern suburban school district. The numbers of subjects by grade level were 106 females and 93 males from the seventh grade, 128 females and 96 males from the ninth grade, and 104 females and 105 males from the eleventh grade. The junior high school was a feeder school for the high school. The student population of both schools ranges from lower to upper-middle socioeconomic class. The survey was administered during regular classes in required courses on a single day in each school.

Data Source

The learner attributes section of the SWSS consisted of 15 items, 3 per attribute, each based on a 4-point Likert-type scale. The number of items was intentionally limited because of the overall length and completion time for the complete 55-item scale. The most positive (or external) response was scored as three (3) and the least positive (or internal) response as zero (0). Data for each attribute were analyzed by a 2 (gender) x 3 (grade level) ANOVA.

Reliability analyses for the three-item subscales yielded alpha coefficients of .58 for approval, .29 for attribution, .47 for challenge, .61 for competence and .51 for locus of control. These coefficients are indicative of fairly high internal consistency for the three-item scales for all of the attributes except attribution. The less acceptable value of .29 for attribution was a function of negative wording in attribution item two, "When you have trouble understanding something that the teacher is explaining, whose fault is it?". Prior to further use of the scale, this item should be revised to be more consistent in wording with the other two attribution items.

Results

Pearson product moment correlation coefficients were computed for each of the fifteen questions. These inter-item correlations (Table 1) revealed that, with one exception, correlations among pairs of items within a particular learner attribute were consistently significant beyond the .001 level and were consistently higher than correlations with items assessing the other attributes. The one exception was item 2 on the attribution scale.

Insert Table 1 here

Table 2 shows the overall mean total for each attribute based on scorings of zero to three. Table 3 summarizes the statistically significant grade by sex ANOVAs for each of the five learner attributes.

APPROVAL Overall means were 2.24 for females and 1.94 for males, F (1,620) = 37.827, $p < .001$, indicating a greater desire for approval of others by females. Overall means by grade level were 2.21 for grade seven, 1.94 for grade nine, and 2.02 for grade eleven, F (2,620) = 5.715, $p < .01$, indicating that approval of others became less important across grade level. A Scheffe post hoc test revealed a significant difference between the seventh and eleventh grades F (2,629) = 5.659, $p < .01$, but not between any other grades. The interaction for sex by grade level was not statistically significant for approval nor for any of the other learner attributes discussed hereafter.

Insert Table 2 here

Insert Table 3 here

ATTRIBUTION The overall means of 2.00 for females and 2.04 for males did not differ significantly, but reflected higher internal than external attribution for success in school. The means by grade level were 2.17 for grade seven, 2.03 for grade nine, and 1.87 for grade

eleven, showing a trend toward less personal attribution as grade level increased. The difference across grade was significant, F (2,619) = 23.720, $p < .001$ and a Scheffe test revealed that each grade differed significantly from the other two.

CHALLENGE Mean scores were 1.67 for females and 1.53 for males, surprisingly indicating a higher desire for challenge by females than by males on school-related tasks, F (1,620) = 8.367, $p < .01$. Means by grade level were 1.72 for grade 7, 1.60 for grade 9, and 1.48 for grade 11, yielding a significant difference, F (2,619) = 8.241, $p < .001$ that reflects less desire for challenge among older students. Scheffe revealed that the mean for grade 7 differed significantly from the mean for grade 11, and that the other means did not differ significantly.

COMPETENCE Overall means were 1.99 for females and 2.01 for males, a non-significant difference in scores that indicates relatively high levels of self-competence for both sexes on school tasks. Grade-level means were 2.12 for grade 7, 2.10 for grade 9, and 1.79 for grade 11, F (2,619) = 28.988, $p < .001$. A Scheffe test revealed that grade 11 scores for self-competence were significantly lower than both the seventh and ninth grades at the .001 level.

LOCUS OF CONTROL Mean locus of control scores were 1.94 for females and 1.98 for males, revealing a relatively high level of internal locus of control for both sexes. Means grade level scores were 1.97 for grade 7, 1.93 for grade 9, and 1.98 for grade 11. Neither the sex or grade level differences were statistically significant.

Figures 1 and 2 show the response patterns in graphic form for each of the five learner attributes by grade level and by sex. It can be seen that the attributes show rather tight patterns of consistency of score levels, especially by sex and to a somewhat lesser degree by grade level.

Insert Figure 1 here

Insert Figure 2 here

Educational Importance

This research provides an initial data base, based on a small set of items for each attribute, but items which generally reflect good reliability, on the distribution of several learner attributes across both sexes and several grade levels. Each attribute has received attention in recent research for its relationship to student learning and/or motivation.

On the Learner Attributes measure, the high mean overall scores by sex of 2.24 for females and 1.94 for males for approval of others about school performance reveal a desire for approval. Approval of others was important for all subjects, but significantly more so for females at all grade levels. These results complement

those of other researchers (Diesterhaft & Gerken, 1983; Prawat, 1976), who have found that academic achievement is a major source of approval and social acceptance for females.

The desire for approval decreased from the seventh grade to the ninth and eleventh grades. A similar pattern was detected by Harter (1975) with elementary school children and by Prawat (1976) with junior high school children. Apparently, a more internal orientation reflecting less desire for the approval of others emerges as children grow older and become more self-sufficient.

The overall results for attribution in school settings show high personal attributions for success for both sexes across grade levels, a result which agrees with other researchers (Parsons et al., 1982; Whitehead et al., 1987; Whitley & Frieze, 1985). The attribution results also revealed significantly weaker personal attributions as grade level increased. This finding differs from the meta-analysis results of Whitley & Frieze (1985), who found no significant grade level correlations, and contrasts with data obtained by Prawat (1976), who found that personal attributions increased significantly from sixth grade to seventh grade and again from seventh grade to eighth grade.

Prawat (1976) and Whitley and Frieze (1985) used different types of tasks from the school-related tasks in the present study. Prawat's (1976) tasks were a battery of affective tests not specifically related to school tasks. Academic tasks made up only 12% of the studies reported by Whitley and Frieze (1985). A possible reason for the different results

in the present study is that children may have different attribution patterns in school than in other situations. In fact, Whitley and Frieze (1985) recommended research on naturalistic tasks in educational settings as an extension of their results.

The results for challenge revealed a significantly greater preference by females for challenge in the school-related tasks used in the survey. Current literature generally reports that males prefer more challenge than females. Most of the studies which have shown males desiring more challenge than females have used word search puzzles, create-a-word tasks, and anagrams, all of which could be considered as more like games than learning tasks by the students (Bogie & Buckhalt, 1987; Harter, 1978; Miller, 1986). The school-related nature of the challenge questions in the present study may have appealed more to females than to males and resulted in their higher preference for challenge. Or perhaps prior research results were affected because female students felt that they must choose either challenge or approval.

The desire for challenge decreased significantly as the grade level increased for both females and males. No explanations for this decrease can be found in current literature. Perhaps this decrease in desire for challenge reflects a greater occupation with non-school matters. Children may become more bored with school tasks or more oriented toward social activities and work opportunities as they become more independent.

Both females and males showed high levels of self-competence for school-related tasks. The comparable levels across sex are contrary to some research findings which show lower ability estimates for females than males (Jagacinski & Nicholls, 1987, McCombs, 1984; Sleeper & Nigro, 1987), but consistent with others (Bogie & Buckhalt, 1987; Prawat, 1976).

Very few studies have addressed grade level and self-competence. In one such study, Prawat (1976) found no significant differences for grade as a source of variance for a self-esteem measure. In the present study, competence tends to decrease as grade level increases.

The results for locus of control show high internal ratings that remained nearly the same across grade levels for both females and males, a result which is consistent with several studies reported by Stipek and Weisz (1984). The present study measured the subjects' desired locus of control for school activities, either self-determined or teacher-determined. Most researchers have assessed locus of control and its relationship to self-competence and achievement using more general measures. They have typically found a positive correlation between internal locus of control and high self-competence (Diesterhaft & Gerken, 1983; Prawat, 1976; see also Stipek & Weisz, 1981 for a review). There was no statistically significant correlation between the measures for self-competence and locus of control in the present study.

A summary of the results by gender across the five learner attributes indicates that females showed a higher desire than males for approval and for challenge in school-related tasks. The result for approval is consistent with other research findings, but the result for challenge contrasts with most research data. Analysis of the research literature on challenge suggests that the most plausible explanation for the higher female preference for challenge in the present study appears to be its greater emphasis on school-type tasks as contrasted to the tasks used in other research.

The significant results across grade levels reveal a pattern in which older students take less responsibility for their learning, desire less personal challenge, care less about the approval of others, and feel less school-related competence. Other researchers have reported similar findings for achievement measures (Prawat, 1976) and for an intrinsic/extrinsic classroom orientation measure (Harter, 1981). Prawat (1976) suggests the increasing importance of peer groups as a possible explanation of his results. Contrarily the approval of friends received a very low rating in the present study.

As students grow older, they become more independent and often look more to the world outside school. As Harter (1981) suggests, it may be that school and academic activities do not have as much importance in students' lives as they did when the students were younger. Another explanation might be that school is no longer

interesting to students or appears to have no relevance to their perceptions of life outside school.

The patterns suggest two possible areas for further research. One would look at the reasons girls desire challenge in school and determine positive ways to provide such challenge. Secondly, it might be interesting to conduct personal interviews with students in order to assess why the attributes studied here lessened as the students grew older. Perhaps the answers will lead us to suggestions for making school more interesting, challenging, and applicable to life.

References

Bogie, C. E. & Buckhalt, J. A. (1987). Reactions to failure and success among gifted, average, and EMR students. Gifted Child Quarterly, 31(2), 70-74.

Diesterhaft, K. and Gerken, K. (1983). Self-concept and locus of control as related to achievement of junior high students. Journal of Psychoeducational Assessment, 1, 367-375.

Gould, R. J. and Slone, C. G. (1982). The "Feminine Modesty" effect. A Self-presentational interpretation of sex differences in causal attribution. Personality and Social Psychology Bulletin, 8, 477-485.

Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the classroom: Motivational and informational components. Developmental Psychology, 17, 300-312.

Harter, S. (1978). Pleasure derived from challenge and the effects of receiving grades on children's difficulty level choices. Child Development, 49, 788-799.

Harter, S. (1975). Mastery motivation and need for approval in older children and their relationship to social-desirability response tendencies. Developmental Psychology, 11, 186-196.

Hughes, B., Sullivan, H. J., and Beaird, J. (1986). Continuing motivation of boys and girls under differing evaluation conditions and achievement levels. American Educational Research Journal, 23, 660-667.

Jagacinski, C. M. and Nicholls, J. G. (1987). Competence and affect in task involvement and ego involvement: The impact of social comparison information. Journal of Educational Psychology, 79, 107-114.

McCombs, B. L. (1984). Processes and skills underlying continuing intrinsic motivation to learn: Toward a definition of motivational skills training interventions. Educational Psychologist, 19, 199-218.

Miller, A. (1986). Performance impairment after failure: Mechanism and sex differences. Journal of Educational Psychology, 78, 486-491.

Parsons, J. E., Meece, J. L., Adler, T. F., & Kaczala, C. M. (1982). Sex differences in attributions and learned helplessness. Sex Roles, 8, 421-432.

Prawat, R. S. (1976). Mapping the affective domain in young adolescents. Journal of Educational Psychology, 68, 566-572.

Rosen, B. C. & Aneshensel, C. S. (1978). Sex differences in the educational-occupational expectation process. Social Forces, 57 (1), 164-186.

Sleeper, L. A. and Nigro, G. N. (1987). It's not who you are but who you're with: Self-confidence in achievement settings. Sex Roles, 16, 57-69.

Stipek, D. J. and Tannatt, L. M. (1984). Children's judgments of their own and their peers' academic competence. Journal of Educational Psychology, 76, 75-84.

Story, N. O. and Sullivan, H. J. (1986). Factors that influence continuing motivation. Journal of Educational Research, 80, 86-92.

Uguroglu, M. E. & Walberg, H. J. (1986). Predicting achievement and motivation. Journal of Research and Development in Education, 19 (3), 1-12.

Van Hecke, M., Tracy, R. J., Cotler, S., and Ribordy, S. C. (1984). Approval versus achievement motives in seventh-grade girls. Sex Roles, 11, 33-41.

Whitehead, III, G. I, Anderson, W. F., and Mitchell, K. D. (1987). Children's causal attributions to self and other as a function of outcome and task. Journal of Educational Psychology, 79, 192-194.

Whitley, B. E., Jr. & Frieze, I. H. (1985). Children's causal attributions for success and failure in achievement settings: A meta-analysis. Journal of Educational Psychology, 77, 608-616.

Table 1: Correlations Among Items Assessing Learner Attributes

Attribute	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Approval 1	.---														
2. Approval 2	.48**	.---													
3. Approval 3	.34**	.21**	.---												
4. Attribution 1	-.04	-.08	.01	.---											
5. Attribution 2	-.19**	-.06	-.07	.06	.---										
6. Attribution 3	-.08	-.23**	-.04	.27**	.02	.---									
7. Challenge 1	-.19**	-.16**	-.04	.04	-.02	.16**	.---								
8. Challenge 2	-.19**	-.21**	-.14**	.10	.06	.08	.21**	.---							
9. Challenge 3	-.25**	-.21**	-.15**	.11*	.12*	.11*	.21**	.31**	.---						
10. Competence 1	-.20**	-.26**	-.13*	.19**	-.04	.28**	.09	.17**	.21**	.---					
11. Competence 2	-.10*	-.15**	-.02	.22**	-.01	.20**	.02	.12	.22**	.30**	.---				
12. Competence 3	-.06	-.08	-.05	.15**	-.03	.15**	.07	.15**	.15**	.36**	.38**	.---			
13. Locus of Control 1	.10	.02	.03	.01	-.11*	.06	-.13*	-.16**	-.19**	.01	.04	-.02	.---		
14. Locus of Control 2	.01	-.01	.02	.07	-.04	.07	-.05	-.09	-.14**	.05	.12	.03	.25**	.---	
15. Locus of Control 3	.08	.07	.04	-.01	-.10.	.01	-.08	-.14**	-.18**	-.03	.04	.01	.26**	.25**	.---

2-tailed Significance: * .01 ** .001

Table 2 Overall Means for Learner Attributes

	Grade							
	7		9		11		Total	
Attribute	F	M	F	M	F	M	F	M
Approval	2.39	2.03	2.20	1.89	2.13	1.90	2.24	1.94
Attribution	2.15	2.19	2.02	2.04	1.84	1.90	2.00	2.04
Challenge	1.80	1.64	1.68	1.51	1.51	1.45	1.67	1.53
Competence	2.17	2.07	2.07	2.12	1.73	1.85	1.99	2.01
Locus Control	1.95	1.99	1.93	1.93	1.94	2.02	1.94	1.98

Table 3 Summary of Significant Differences for Learner Attributes

Attribute	Sig.	Variable	Difference
Approval	.001	Female	Females rated approval more important
	.01	Grade	7th graders rated approval more important
Attribution	.001	Grade	7th graders rated internal attribution more highly
Challenge	.01	Female	Females rated challenge higher
	.001	Grade	7th graders rated challenge higher
Competence	.001	Grade	7th graders rated competence higher than 11th graders
Locus of Control			There were no significant differences

Figure 1. Learner Attributes by Sex.

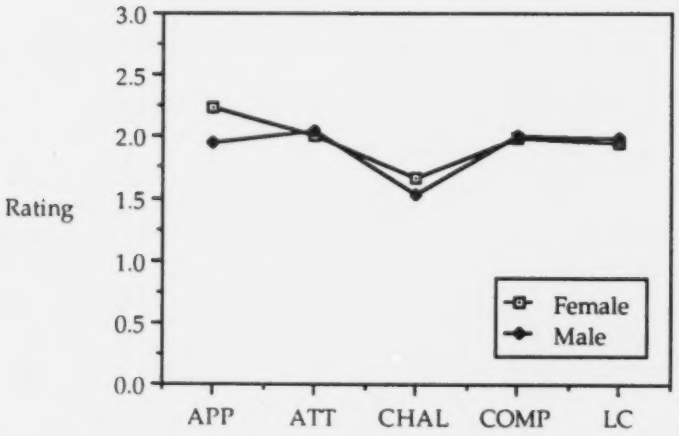

Figure 2. Learner Attributes by Grade.